

DCC cost recovery and financeability

This paper sets out a range of policy options relating to the financeability, cost recovery and charging arrangements of the DCC. We also provide background to our proposals in the Prospectus.

From	Smart metering programme
To	SMG Sub-Group 3 members
cc	
Date	30 September 2010

1. Introduction

1.1. This paper sets out a number of policy options relating to the financeability, cost recovery and charging arrangements of the DCC. In particular, it outlines the policy options related to the following issues:

- How can financeability of the DCC be provided for in its licensing and governance framework, including the funding options that allow the DCC to meet its start-up costs and support initial activities?
- Given current proposals for DCC scope, structure and function, how should the DCC recover its costs and the costs of its service providers through its regulatory framework and charging methodology?
- What charging methodology principles and structure of service user charges should and could be adopted to provide appropriate pricing signals to the users of the DCC's services?

1.2. A series of appendices provide supporting material.

2. Proposals for Communications Business Model

2.1. The Prospectus outlined and analysed a wide range of potential structures and realisation models for DCC.

2.2. We proposed that DCC should be established as a single licensed entity to carry out vendor governance, procurement and contract management activities, following a competitive tender process conducted by the smart metering programme.

2.3. A key role for this new entity would be to run competitive tenders to procure a number of service providers, which would together deliver the full scope of the data and communications services required.

2.4. Our analysis suggests that this model would offer greater flexibility for industry and service requirements change. We also consider that the procurement and contract management role would have the capacity to operate closer to industry and hence would be able to more effectively contribute to the implementation of the evolution of DCC services.

2.5. It would also offer the prospect of more effective procurement of service providers, combined with maintaining more effective downward pressure on costs through the retendering of individual service provider contracts. DCC can itself be incentivised in a flexible manner to meet agreed performance outputs.

3. Viability

3.1. DCC will have a pivotal role at the heart of the smart metering market. It is therefore vital that it delivers a cost efficient and resilient service. But it must also be a financeable entity that can be delivered through a competitive licence award process and which is flexible to adapt to developments in the industry.

3.2. DCC's financial viability will depend on the exclusivity granted by its licence, its ability to recover its costs and the manageability of the risks which are allocated to it. DCC's licence and regulatory regime will need to provide a credible commitment to service providers to fund any capital invested in their services and provide for a level of ongoing profitability (*ex ante*) that reflects the underlying risks of service provision given DCC scope and function.

3.3. Ultimately it will be the responsibility of the DCC as a "For Profit Entity" to determine within its contractual and regulatory framework, the appropriate financial structure for its business. However, an efficient financial structure will depend on the allocation of risk to the DCC function, the proposed approach to cost recovery and the commitment to funding investment and ongoing service provision provided by the users of the DCC services and its associated service providers.

3.4. Financeability of DCC will need to be *provided for* under the terms and conditions of its licence and code governance processes. This is similar to Ofgem's obligation to ensure that network companies are able to finance their functions under their licence. There are number of available options for providing this commitment at the award of the competitive licence tender:

Proposals for DCC financeability

- DCC will have a contractual right to recover from its service users its own internal costs and the cost of the contracts resulting from competitive tenders.
- DCC allowed profitability could be set:
 - as a parameter settled as part of the tender process for the grant of the entity's licence, similar to the Offshore Transmission Operator (OFTO) regime; or
 - by Ofgem and reviewed (*ex ante*) at an appropriate reopener window.
- Alternatively, DCC governance could provide certainty about certain aspects of DCC financing (for example, allowed profitability settled at the competitive licence tender) while also allowing flexibility for elements that may need to change (for example, the incentive parameters that apply to the DCC target rate of profitability).

3.5. As we set out in the Prospectus, the DCC will be an 'asset light' business, and rather than trying to create an asset base for the business to which a required return on capital would need to be applied, a margin based approach on turnover or operating costs is likely to be more appropriate.

3.6. This applies to all of the options for setting DCC allowed profitability outlined above. In Appendix A, we consider some of issues and precedent of assessing allowed profitability using a margin based approach and provide more detailed descriptions of each of the options set out in the text box above.

3.7. Under our proposed Communications Business Model, the DCC will have an exclusive position in the smart metering market. It will also have a small cost base relative to that of the service providers with which it contracts. DCC will therefore require sound governance, regulation and funding arrangements.

3.8. In order to protect the interests of consumers, provide for the financeability of the DCC and maximise the benefits of the smart metering programme, a number of important decisions also need to be made with respect:

- the cost setting and recovery mechanism that applies to DCC;
- the charging arrangements and principles of cost allocation to industry users; and
- the need for appropriate start-up funding mechanisms for the DCC entity.

3.9. In the sections which follow, we present the policy options that we set out in the Prospectus, provide a discussion of our wider thinking in each of these areas, and present a high-level evaluation of the advantages and disadvantages of the alternative options.

4. Cost recovery and user charging

4.1. A cost setting methodology (both a *cost allocation* method and model for setting DCC *allowed revenue* and the recovery of contract service provider costs) will need to be established in the DCC's licensing and code governance arrangements. We consider each component of the DCC cost recovery model in the sub-sections below.

Cost setting and recovery

4.2. Figure 1 (see Appendix B) shows the main commercial interfaces and financial flows between the parties involved in the smart metering system. Under the proposed Communications Business Model, DCC will have a small cost base relative to that of the service providers with which it contracts.

4.3. The variation of the DCC's internal cost base will depend on the tendering activities undertaken by the entity in a particular year. For example, at initiation, DCC will be procuring communications and data services, managing the development and integration of systems and process, and playing a role in industry integration and trialling.

4.4. DCC will need to recover these internal costs, and the costs of its service providers, through a cost setting and recovery mechanism agreed through its licence and code governance processes. This will require a regulatory framework that is flexible to the commercial / pricing model adopted by the DCC and its service providers, but also provides appropriate commercial incentives to DCC to deliver cost savings and key outputs and service performance levels.

Policy options and principles for DCC cost setting

- Under a procurement, vendor governance and contract management business model, DCC will have a small cost base relative to that of the service providers with which it contracts. The competitive DCC licence award process (“competition for the market”) will expose these internal costs to competitive pressures.
- Nevertheless, the variation of the DCC’s internal cost over its licence period will mean it is likely that a budgetary control or cost setting mechanism will also need to be included in the DCC’s licence and governance process.
- DCC’s operating plan and budget (allowed revenue) would need to be agreed through this governance process. For example, its operating plan and budget could be fixed for the duration of its licence, providing a fixed revenue stream over the life of the concession.
- Alternatively, the DCC’s operating plan budget could be fixed for a set period following the licence award process, after which it is reviewed by the relevant authority to reflect DCC steady-state costs following the initial ‘ramp-up’ of activities associated with the initial service provider procurement process.
- This will require a performance or cost review process to be agreed over the regulatory cycle of the DCC licence and would form a part of the ‘structure’ of DCC’s cost setting and recovery mechanism. Alternatively, an ‘extraordinary review’¹ or reopener window could be built into the DCC’s licence to allow for the variation in its costs.
- The DCC’s allowed revenue /operating budget will also need to include the costs of the service provider contracts resulting from competitive tenders. As set out above, these will need to be subject to a pass-through mechanism to ensure bankability.
- The DCC’s cost recovery and pricing model will need to provide appropriate commercial incentives for the delivery of key outputs, service performance and cost savings over the course of its licence period.²
- More generally, DCC’s cost recovery mechanism will need to facilitate competition in the delivery of its contracted services, provide flexibility of service delivery and also predictability and transparency of the costs recovered from the users of its services.

4.5. Cost recovery of the DCC’s services could be based on a combination of pricing models often adopted in the communications industry to reflect the cost drivers of telecommunications and data management services, including: fixed-fee pricing models commodity pricing models (for example, a per product upfront charge) and utility pricing models (for example, a price per unit of service delivered charge). As well as industry user charging arrangements, the appropriate DCC pricing and cost recovery models will need to be reflected in the underlying pricing and tendering of the DCC’s associated service provider contracts.

4.6. The pricing model adopted will impact on the period over which DCC start-up costs will be recovered, the investment risk borne by the DCC and its service providers, as well as the efficient financial structure of the DCC concessionaire. A commodity pricing model would require a more instantaneous form of DCC cost recovery, while a utility pricing, or ‘demand-driven’ pricing model would rely on the realisation of forecast demand for DCC services to adequately recover costs.

4.7. Given the proposals in the Prospectus for industry user charging arrangements, a utility pricing model for DCC and service provider cost recovery is likely to provide greater alignment between the DCC’s input costs and its output prices. The practicality of this approach will depend on the DCC’s business plan and service providers’ willingness to fund a ‘demand-driven’ cost recovery model.

¹ For example, a trigger mechanism for a review process where DCC costs exceeds an agreed tolerance level.

² The options for DCC incentivisation will be presented at the October 19th WSG 3 working group on DCC design and delivery options.

4.8. We discuss the *structure* of DCC user charges in the section which follows.

Charging arrangements for industry users (cost allocation)

4.9. The DCC will need to charge the users of its services in order to recover the revenues it is permitted under the terms of its licence and the Smart Energy Code. The general principles of the DCC charging methodology are expected to be set out in its licence. The licence would require DCC charging statements to be compliant with the methodology, while its charging methodology would be set out in the Code.

4.10. As we set out in the Prospectus, the standard charges for DCC's services need to reflect the relevant cost drivers. This will provide for a structure of DCC industry user charges that provides appropriate pricing signals to the users of its services, but are also consistent with the business plan, start-up and ongoing operational costs of the business.

4.11. The principle of cost-reflectivity is based on the economic rationale that if the costs which parties impose on the DCC as the provider of the Wide Area Network (WAN) and other data management services are reflected in the charges they pay, then they will be appropriately factored into their commercial decisions and their capability requirements of DCC services. This in turn should help to ensure that the cost delivery of the DCC's services is not higher than it needs to be.

4.12. Some other more general principles that may be appropriate for the DCC's charging methodology include:

- Facilitation of competition;
- Flexibility;
- Predictability; and
- Transparency.

4.13. We set out the rationale for these principles and objectives in Appendix C.

4.14. The text box below summarises the options for DCC service user charges which we proposed in the Prospectus.

Options for DCC charging arrangements

- **Activation charge:** An on/off activation charge in respect of each activated WAN communications module. This would recover costs associated with bringing each WAN connection into service as well as an appropriate share of central communications costs and the administrative costs of connection set up.
- **Standing charge:** A standing, or rental charge, in respect of each WAN connection that is served, or a share of a WAN connection when two or more smart meters share a WAN connection. This would recover the cost of maintaining the WAN connection.
- **Volume charges:** A charge related to the volume of data transferred, which may be differentiated by time of day and, depending on the technology, a charge for the number of data transfers (i.e. the frequency of meter data access).
- **General charges:** A contribution to other administration and general costs incurred by DCC that are not related to any of the above direct cost drivers.

4.15. In Appendix C we present the options for different users of the DCC's services contributing to each of these user charges.

5. Upfront DCC funding options

5.1. DCC will need to be established before services can be delivered. As rollout will build up gradually, cash flows could be negative for a period after service commencement, implying a need for additional finance.

5.2. Start-funding may be required to support activities such as the procurement of the underlying service provider subcontracts, IT system procurement and integration, pilot trials and testing. The choice and level of funding from available sources will depend in large part on the cost of borrowing and the profile of DCC's projected cash flows.

5.3. Some of the available options are summarised in the text box below. Each of these options need to be tested with stakeholders in the smart metering programme and potentially financing institutions who might lend to the DCC under a commercial bank loan funding model.

Policy options for DCC start-up activity financing

- **Option 1** - Funding from users of DCC's services. This could be structured as a loan repayable out of future operating cash flows and might be provided pro rata to the number of meter points for which each supplier is responsible.
- **Option 2** - Funding from commercial banks and other financial institutions repayable out of future operating cash flows. The loan will also need to be secured or provided a guarantee for lenders to be prepared to lend to the DCC under this funding model.

5.4. An alternative to the options in the text box would be DCC Parent Company financing. This option of course assumes that the successful bidder for the DCC licence is part of a larger group or consortia. The DCC licence will have to guarantee sufficient rate of return to make the commercial risk palatable to potential bidders.

5.5. Another alternative is a hybrid of the available policy options, for example, a combination of user and commercial bank loan financing. This could allow different sources of funding to be adopted for different activities and costs related to DCC start-up.

5.6. An associated issue is how each of these options and instruments would be embodied in the DCC regulatory framework. For example:

- Under a user funding model, the loan would need to be repayable out of future cash-flows either as a "fixed amount" included in the DCC allowed revenue formula or alternatively recovered through a 'set of' arrangement against DCC charges levied against them.
- Under a commercial funding model, the costs of borrowing would need to be repayable out of future cash-flows again as a potentially "fixed amount" included in the DCC allowed revenue formula.

5.7. The viability of different options for start-up funding at the establishment of the DCC will depend upon the commitment in the licence for the recovery of these costs, including the associated cost of capital.

6. Questions and issues for discussion

6.1. We welcome views on what a workable set of arrangements might look like. These will need to be reflected in the DCC licence and the regulatory and commercial framework document including the new Smart Energy Code.

6.2. Do you agree with the proposed policy options for DCC cost recovery and charging arrangements? What is your preferred approach and why?

6.3. What are your views on DCC financial and viability issues, in particular, the approach to allowed profitability and the role of the competitive licence tender in setting the financial framework for the DCC?

6.4. Do you agree with the proposed policy options for DCC start-up activity funding? What is your preferred approach and why?

Appendix A: Margin based approach to setting allowed profitability

Why use this approach?

The standard approach adopted for setting an allowance for profit in network price/revenue controls is to provide a regulated allowed return on capital – set at the regulated entity's weighted average cost of capital (WACC) applied to its Regulated Asset Base (RAB).

However, where the regulated entity buys and resells large amounts of a product into a monopoly market, with relatively little value added, and there are few fixed assets employed, regulators have considered an alternative and more appropriate way to determine an allowance for profit is to recognise a specified margin on turnover rather than to specify a rate of return on capital employed.³

In the case of supply or retail businesses where the accounting asset base is small, there has often also been concern that the WACC based approach will lead to too low a level of profits. This problem arises because either the RAB does not capture the working capital needs of the business or because some intangible assets have been built up over time, such as a brand name, which is not captured in the accounting valuation of the business. In this case, rather than trying to recreate the true accounts of the business, it is often felt to be easier to use a margin based approach.⁴

Evidence from other sectors

What is an efficient level of profitability and recognised margin on turnover for retail and energy trading businesses?

In 1995, in the Monopolies and Mergers Commission report on Scottish Hydro, a margin on sales of 0.5 per cent was considered adequate for first tier electricity supply. This study highlighted the importance of the low level of capital employed and the high proportion of pass through costs in considering the margin.⁵

Ofgem's Initial Findings report for Energy Supply Probe provided an assessment of the profitability of the major energy suppliers. Ofgem noted that "energy supply is a business with low levels of invested capital and a very high level of pass-through costs, a proportion which is price regulated. As such, we would expect the margin on sales to be low as it is a percentage share of the entire energy value chain – including fuel production, generation, transmission and distribution."⁶

Ofgem found that:

"based on suppliers' submissions, we estimate the average pre-tax margin on sales in energy supply between 2005 and 2007 (inclusive) was around 2 per cent. Evidence from business plans suggests that this was below companies' expectations, although compensated for by higher profitability in electricity generation and gas production. Several companies cite a "through the cycle" supply margin of 5 per cent as an appropriate benchmark for the retail energy sector, based on public comments by Centrica, owners of British Gas."

³ The Director General for Electricity Supply (DGES) in the past adopted this approach for the review of the REC's supply price controls.

⁴ Alexander I (2004): 'Cost of Capital: A practical guide for infrastructure regulators'

⁵ Monopolies and Mergers Commission (1995): 'Scottish Hydro-Electric plc: A report on a reference under section 12 of the Electricity Act 1989'

⁶ Ofgem (2008): 'Energy Supply Probe – Initial Findings Report'

As part of the Energy Supply Probe Ofgem also reviewed profitability margins in other parts of the energy value chain and sectors of the economy.

It presented evidence that:

- A net margin of around 5 to 8 per cent of the total value chain revenues would be considered to remunerate investment in new coal or gas fired build generation.⁷
- In setting price controls in 1998, Offer and Ofgas considered a margin on sales of 1.5 per cent to adequately reflect increased risks from the introduction of competition.
- The level of margin used by the Competition Commission (CC) in its 1999 report on BT's charges to connect mobile phones was consistent with the Offer and Ofgas decision, and the report stated that "*a key consideration ... is the extent to which the turnover ... is accounted for by bought services.*"

Implications for the regulation of DCC

The DCC licence must provide for an allowed level or rate of profitability consistent with the performance, investment and regulatory risks of the DCC function.

There are a number of available options for providing this commitment at the award of the competitive licence tender:

- **Option 1** – DCC allowed margin is set by Ofgem and reviewed (*ex ante*) at an appropriate reopener window. There are a number of variants of this approach:
 - The licence only states the need for a review of DCC allowed margin providing Ofgem with flexibility and regulatory discretion of the methodology it adopts.
 - The licence or Smart Energy Code requires for the establishment of *ex ante* regulatory rules or statements of principle for how Ofgem will review DCC financing and will consider the allowed margin.

Under each of these variants a determination cycle period will need to be agreed upon at licence award. Alternatively, the financial parameters of the DCC's regulatory regime could be set by Ofgem but fixed for the duration of the DCC licence period (for example, ten years).

- **Option 2** – DCC allowed margin is established through a contractual mechanism as a way of establishing commitment. For example, a long-term instrument, as per the OFTO regime (a 20 year commitment), which embodies the regulatory and financing regime. As for Option 1, there are a number of variants that can be considered:
 - DCC target (i.e. *ex ante*) allowed profitability would be a parameter settled as part of the tender process for the grant of the entity's licence (a similar approach is adopted in OFTO regime).⁸ This was the approach proposed by Ofgem in the Prospectus.

⁷ Ibid.

⁸ DCC actual profitability will depend on its performance against its objectives and incentive regime. The tender process will set the equity return if the DCC is economic and efficient.

- The DCC licence and Smart Energy Code could provide certainty about aspects of the DCC regulatory finance regime (for example, *ex ante* allowed profitability settled at the competitive licence tender) while also allowing flexibility for elements that may need to change (for example, the incentives and performance parameters that apply to the DCC's target rate of profitability).

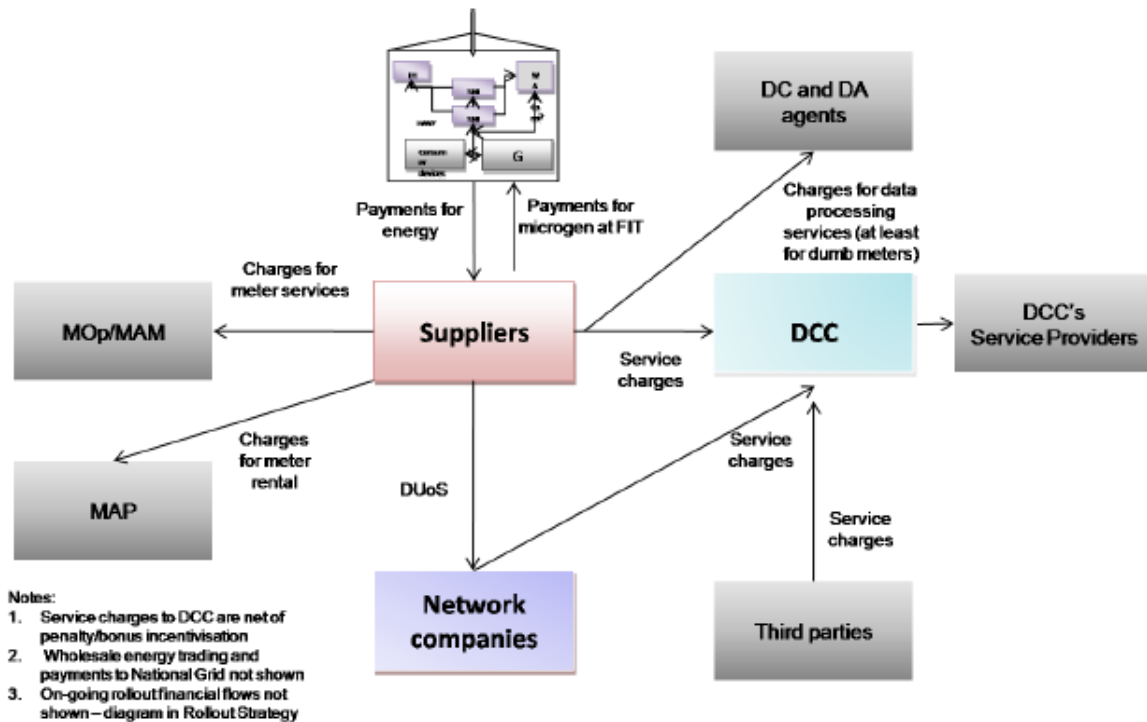
The greater commitment is provided on DCC financeability in the licence (as opposed to other control mechanisms for the DCC such as the Smart Energy Code) the lower the regulatory risk for investors. That is, the more is "contractualised" in the approach to financeability, the lower is the regulatory risk, and so in theory the cost of DCC services to consumers.

In order to manage its contractual relationships, it is possible the DCC will also need access to an adequate working capital facility (WCF). As well as a commitment of an allowed margin, this WCF will need to be provided for under the DCC's budget control mechanism and incentive regime.⁹

⁹ Regulators have in the past adopted a margin based approach to allowed profitability as opposed a Regulatory Asset Base (RAB) model because the RAB is considered not to capture the working capital needs of asset light businesses. The allowed margin or incentive rate for the business is therefore set to provide for the costs of an adequate WCF.

Appendix B: Cost recovery of DCC services

Figure A1: Commercial interfaces and financial flows between the parties involved in the smart metering system



The main financial flows with respect to the DCC include:

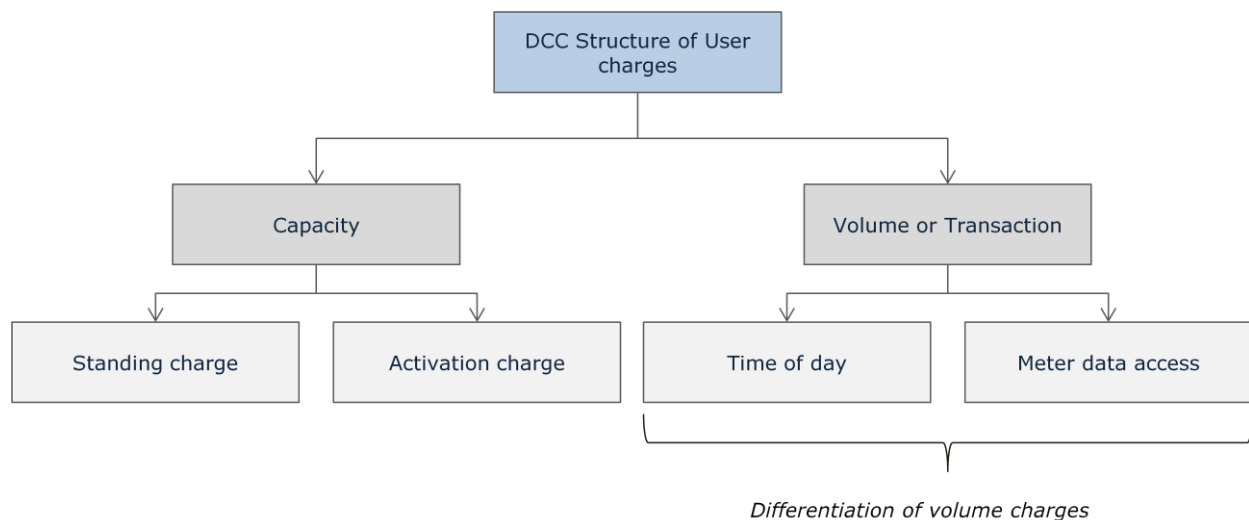
- **Contractual relationships:** DCC will enter into bilateral agreements with its service providers. Relationships between DCC, the energy suppliers, network companies and other users of DCC’s services would be based on the Smart Energy Code supported by a multiparty agreement to which all parties would be bound. Depending on the scope of the services to be offered by DCC, third parties could also be bound by the same agreement, or have bilateral agreements with DCC.
- **Charges to DCC customers:** All users would be charged by DCC for meter access and data services.
- **DCC payments to service providers:** DCC would be charged by service providers for data and communications services.

Appendix C: User charging structures

The standard charges for DCC's services need to reflect the relevant cost drivers and provide appropriate pricing signals so that they are factored into the commercial decisions and capability requirements of DCC service users. The structure of DCC charges is therefore linked to its proposed scope and function.

The options for DCC service user charges we proposed in the Prospectus can be broadly characterised as a two-part tariff structure: charges related to the connection/provision of capacity to access the DCC WAN and data management services; and volume/transaction charges related to the volume of data transferred and the speed or frequency of meter data access. The activation and standing charges would recover the fixed costs of the DCC's WAN connection setup and maintenance costs. Volume and general user charges would recover the remaining allowed revenue agreed through the DCC's licence and code governance processes, for example, a charge for the number of data transfers.

Figure B1: DCC charging structure



This raises the question of which users should contribute to each of these service user charges. For example, should electricity and gas network companies only pay volume charges and contribute to general charges, or alternatively should they also share the activation fees and standing charges related to WAN connection set up and maintenance costs?

DCC would be providing WAN connections and related services in response to the supplier-led rollout of smart meters. Suppliers are likely, at least before smart grid applications have begun to develop significantly, to be the major drivers of the data communications capacity requirements that DCC needs to deliver.

There are therefore a series of approaches which could be adopted:

- One approach for the allocation of fixed costs, if service provided to network companies do not require significant additional capability, would be to have suppliers pay the full costs of activation and the standing charge, just as they will pay for the full cost of the smart meter. This provides for a clear delineation for the allocation of fixed costs and (consistent with a supplier-led rollout of smart meters) a demand-driven industry user charging structure. The fixed costs of the DCC services will also be passed through the competitive retail supply market

providing the strongest incentives for industry users to internalise fixed costs in their commercial decisions and capability requirements from DCC services.

- An alternative approach would be to divide the charges for the WAN connection point between all parties on some agreed basis, for example, linked to the volume and frequency of data both require.¹⁰ Depending on the development of smart grids, and the corresponding data and communications requirements which the DCC will need to deliver, this approach will help to ensure that the right price signals are sent to the parties that have the potential to drive DCC's costs. If this approach were adopted from DCC Go-Live, it may also have implications for the price controls of the gas and electricity network companies as DCC fixed costs will need to be factored into their business plans.

Under either approach, network companies would pay volume charges and make a contribution to general and administration charges.

There is also the issue of the allocation of fixed costs between gas and electricity suppliers and the network companies to consider:

- One option would be the lead supplier (and local network company), i.e. the supplier that installs its smart metering system first, would pay the full costs of activation and the standing charge.
- An alternative is arrangements are put in place to facilitate the sharing of fixed costs of WAN connection and maintenance. For example, a similar approach to the cost apportionment rules in connection charging for gas and electricity networks could be applied to ongoing DCC user charges.

Until there is a clearer picture about the development of smart grids, a choice between the different approaches is hard to make. As a result, we proposed in the Prospectus that a review be conducted as part of the development of the Smart Energy Code, before DCC starts to deliver its services, in order to finalise the most appropriate charging methodology for DCC.

There is a further consideration if the DCC is allowed to offer additional capability of its core smart metering services (for example, half hourly rather than hourly data), or alternatively access to providers of non-value added services. While this may significantly increase the commercial attractiveness of DCC, such activities must not compromise the delivery of DCC's core electricity and gas smart metering services. This also applies to user charging arrangements.

For additional capability requirements applying to DCC's core electricity and gas smart metering services, the costs and any associated initial funding requirements should be charged for on a 'user-pays' basis (i.e. there should be no cross-subsidy between the core users of the DCC services and users who require additional capability of those core services).

There should also be no cross-subsidy between the core users of the DCC services and non-core users (i.e. providers and users of value-added services) as DCC would make available access to these providers on a non-discriminatory basis. In the Prospectus, we proposed that the users of non-core services would need to be subject to all relevant charges of those services and activities, including covering any initial funding requirements as appropriate.

¹⁰ This of course assumes that the volume and frequency of data that both energy suppliers and network companies require is an appropriate cost driver of the capacity / fixed costs of DCC services and data management requirements.

We will continue to evaluate the available options against the principles for user charging and the objectives of the smart metering programme more generally. This will require a DCC user charging structure that provides for:

- Cost reflectivity: i.e. a structure that reflects the relevant cost drivers of DCC services and the roll-out of smart meters.
- Facilitation of competition: in particular, competition in the energy retail supply market and associated meter services.
- Flexibility: to allow for the addition/deletion of services without commercially disadvantaging other services or the DCC business plan.
- Predictability/transparency: to help facilitate competition and accuracy of forecasts and business planning.